

Claim Amendments

1. (original) A method for expressing in a plant a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase, the method comprising the steps of:

providing a vector comprising a DNA sequence encoding a glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase; and

transforming the plant with the vector.

2. (original) A method according to claim 1, wherein the glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, while not significantly altering its catalytic ability.

3. (original) A method according to claim 1, wherein the glycerol-3-phosphate dehydrogenase is  $\text{gpsA2}^{\text{FR}}$ .

4. (original) A method according to claim 1, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID NO: 2.

5. (original) A method according to claim 1, wherein the DNA sequence encoding the glycerol-3-phosphate dehydrogenase comprises the sequence listed in SEQ ID NO: 1.

6. (original) A method according to claim 1, wherein the glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO: 2.

7. (original) A method according to claim 1, wherein the plant is an oilseed bearing plant.

8. (original) A method according to claim 1, wherein the plant is of the genus *Brassica*.

9. (original) A method according to claim 1, wherein the plant is *Arabidopsis thaliana*.

10. (original) A plant expressing a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase.

11. (original) A plant according to claim 10, wherein the glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, while not significantly altering its catalytic ability.

12. (original) A plant according to claim 10, wherein the glycerol-3-phosphate dehydrogenase is *gpsA2<sup>FR</sup>*.

13. (original) A plant according to claim 10, wherein the plant harbours a DNA sequence encoding the amino acid sequence listed in SEQ ID NO: 2.

14. (original) A plant according to claim 10, wherein the plant harbours a DNA sequence as listed in SEQ ID NO: 1.

15. (original) A plant according to claim 10, wherein the glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO: 2.

16. (original) A plant according to claim 10, wherein the plant is an oil seed bearing plant.

17. (original) A plant according to claim 10, wherein the plant is of the genus *Brassica*.

18. (original) A plant according to claim 10, wherein the plant is *Arabidopsis thaliana*.

19. (original) A method for producing a genetically altered plant having altered fatty acid content in its glycerolipids, the method comprising the steps of:

providing a vector comprising a DNA sequence encoding a glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase; and

transforming the plant with the vector.

20. (original) A method according to claim 19, wherein the glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, while not significantly altering its catalytic ability.

21. (original) A method according to claim 19, wherein the glycerol-3-phosphate dehydrogenase is gpsA2<sup>FR</sup>.

22. (original) A method according to claim 19, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID NO: 2.

23. (original) A method according to claim 19, wherein the DNA sequence encoding the glycerol-3-phosphate dehydrogenase comprises the sequence listed in SEQ ID NO: 1.

24. (original) A method according to claim 19, wherein the glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO: 2.

25. (original) A method according to claim 19, wherein the plant is an oil seed bearing plant.

26. (original) A method according to claim 19, wherein the plant is of the genus Brassica.

27. (original) A method according to claim 19, wherein the plant is Arabidopsis thaliana.

28. (original) A method according to claim 19, wherein the plant glycerolipid has elevated levels of C16 fatty acids.

29. (original) A method for producing a genetically altered plant having increased stress tolerance relative to the wild type, the method comprising the steps of:

providing a vector comprising a DNA sequence encoding a glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase; and  
transforming the plant with the vector.

30. (original) A method according to claim 29, wherein the glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, while not significantly altering its catalytic ability.

31. (original) A method according to claim 29, wherein the glycerol-3-phosphate dehydrogenase is *gpsA2<sup>FR</sup>*.

32. (original) A method according to claim 29, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID NO: 2.

33. (original) A method according to claim 29, wherein the DNA sequence encoding the glycerol-3-phosphate dehydrogenase comprises the sequence listed in SEQ ID NO. 1.

34. (original) A method according to claim 29, wherein the glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO: 2.

35. (original) A method according to claim 29, wherein the plant is an oil seed bearing plant.

36. (original) A method according to claim 29, wherein the plant is of the genus *Brassica*.

37. (original) A method according to claim 29, wherein the plant is *Arabidopsis thaliana*.

38. (original) A method according to claim 29, wherein the stress is osmotic stress.

39. (withdrawn) A vector for genetically transforming a plant, wherein the vector comprises a DNA encoding a protein having glycerol-3-phosphate dehydrogenase activity, and the plant, after transforming, exhibits enhanced biosynthesis of glycerol and/or glycerol-3-phosphate.

40. (new) A method according to claim 1 wherein the vector comprises a DNA encoding a protein having glycerol-3-phosphate activity.

41. (new) A method according to claim 1 wherein the transformed plant exhibits enhanced biosynthesis of glycerol and/or glycerol-3-phosphate.